

DISSTON

Pruning Guide



• FLOWERS

• SHRUBBERY

• TREES

• FRUIT



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PHILADELPHIA, U. S. A.

Why Pruning is Necessary to Help Nature

SPEAKING generally, "pruning" means the removal from a plant of that part which is undesirable with a view of improving the health of the plant; of bettering the product; or of enhancing the appearance of the plant, shrub or tree.

Nature herself does a good job of pruning—she is even more ruthless at times than many gardeners or growers. In winter, spring, summer and fall, her invisible pruners are at work with the result that strong, healthy trees, shrubs and plants flourish while the weaker are "pruned" by the elements.

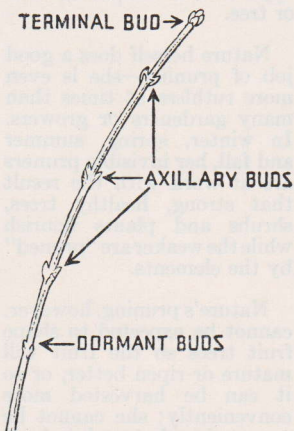
Nature's pruning, however, cannot be expected to shape fruit trees so the fruit will mature or ripen better, or so it can be harvested more conveniently; she cannot be expected to destroy hundreds of blossom buds in order that a few may become super flowers; nor can she be expected to shape hedges, shrubs and vines to conform to any individual design or formal effect.

To achieve these things—careful, painstaking pruning is necessary on the part of the grower, the gardener, the homeowner. Such pruning saves wasted effort on the part of the plant, shrub or tree and deflects the energy to the production of finer flowers, better fruits or additional growth.

Thus it is that intelligent pruning becomes a most essential factor of management with the fruit grower; the gardener; the man who cares for his own home trees, shrubs and plants; or the woman who loves to raise fine roses, dahlias, etc.

General Information on Pruning

PLANTS grow by means of buds. The bud forms; then usually rests for a period; then it resumes growth, develops into a twig or branch which becomes part of the plant structure; or produces flowers, followed by seeds or fruits.



Showing how buds form
on a branch

If one takes a branch or twig from a shrub or fruit tree—along the sides and at the tip little pointed caps or swellings will be noticed. They are different in structure from the branch itself. If pulled apart and examined under a magnifying glass these buds will be found to be miniature leaves or parts of a flower. These buds are easily rubbed or broken off.

Further examination will show that the buds on the same branch or twig are different. The one at the end is the *terminal* bud; those which appear lower, either alternately or in pairs, are known as *axillary* buds because they are formed in the axils of leaves.

Still further examination will show that the buds growing near the end or from the upper side of the branch are stronger than those

appearing on the under side or those appearing lower down on the branch.

Many of these buds, especially the weaker ones, remain *dormant* and are known by that term. Should an upper, stronger bud be removed, some one, often more than one, of the dormant buds start to grow. This is Nature's way of continuing growth when something interferes with growth already in progress.

There is still another form known as *adventitious* buds. These form along a main branch or on the trunk of the tree to carry on the growth should the terminal and all the axillary buds of a branch become injured.

From the foregoing, it will be seen that the shape of the plant, position of branches, number of blossoms or quantity of fruit can be controlled by removing certain parts of the plant and directing the energies into other channels. It is at this point that pruning comes in to assist Nature and direct growth as the gardener or grower wishes.

Pruning with an Aim

Pruning, whether it is merely rubbing off buds with the fingers; cutting off twigs or branches; cutting back entire plants; or removing large limbs—all can be divided into three broad classes according to the results which the gardener or grower aims to achieve. These are as follows:

Pruning for health and vigor;

Pruning for quantity or quality of product; and

Pruning for form or shape.

Pruning for health and vigor must be practiced differently with different plants. **Some should be pruned severely; some only slightly.** The plant which is weak often can be made vigorous by severe pruning. Plants that are vigorous should be pruned less severely.

The first step in this class of pruning is to remove all dead wood and to cut back to live growth all dying or poorly developed parts. Crossed limbs or branches likely to injure each other by rubbing should be removed. Undesired growth such as ground shoots and parts of the plant which are not needed for the results aimed for, also should be removed.

To prune a weak plant severely and a strong one less severely may seem contradictory, but what one can't see enters the problem here: The vigorous plant usually has a strong, vigorous root system; when pruned severely the balance between root system and plant is upset and the plant quite often is weakened. On the other hand, severe pruning often restores the balance already upset by disease or other cause. Should the root action of a vigorous plant be checked temporarily by disease, transplanting, etc.—severe pruning of the plant often may be practiced with advantage.

In pruning for quality or quantity of product, it is the practice usually to aim for quality—better fruits or larger flowers; or for quantity in the way of longer periods of bloom. In this case, the gardener sacrifices the weaker buds or weaker parts of the plant to divert the energy, which would naturally go to them, to the stronger parts or blossoms.

This class of pruning must be handled with judgment because if carried too far, Nature may turn the surplus energy into growth of new wood and foliage, thus defeating the gardener's desire. Within limits, however, this class of pruning brings results.

Pruning for shape or form is practiced extensively with fruit trees, hedges, vines, etc. Every plant has its own habits of growth and plant form. This the gardener alters to suit his desires by proper pruning. With fruit trees, it

is done so they may be cared for more easily and the fruit harvested more conveniently. In the case of hedges and other ornamentals, it is done to keep them within desired limits.

In this class of pruning it must be remembered, particularly in pruning hedges and other ornamentals—that in removing the upper bud or buds, the lower buds are stimulated. This formulates a pruning rule which contradicts the one given on page 3; nevertheless, with hedges, etc. it should be remembered that: **The more vigorous parts should be pruned more severely than the weaker growths.**

With hedge, the pruning should be started early in the plant's life and continued with regularity if a thick growth from bottom up is to be secured. (See pages 15 and 16.) The constant cutting back at the top, which always is vigorous, stimulates the growth of the lower portions which always are weak because of insufficient light and air.



How to Prune—

“Rights” and “Wrongs”
worth remembering.

ONE of the main objects of pruning is to conserve energy and divert it into more advantageous channels. Early pruning in the life of a plant, therefore, is recommended. Buds may be rubbed off with the fingers the first year and achieve the result that could only be accomplished two or three years later by cutting away entire branches. The energy required to grow such branches thus is saved and diverted to desired structural growth.

This finger pruning, termed ‘dis-budding’, is not practiced nearly as much as it should be. Many persons do remove buds from flowers to get larger blooms and ‘pinch out’ surplus shoots from garden vegetables; yet a study of young shrubs, vines and trees would reveal many additional opportunities for practicing dis-budding to the ultimate advantage of the plant.

In using pruning shears, there are several “rights” and “wrongs” that should be learned and followed. They are:

Cut above an outside bud. If care is taken to cut to an outside bud wherever possible, the new branch will grow *outward* and help to keep the center of the plant open with plenty of space for light and air.

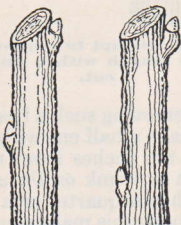
Cut the correct distance from bud. Select the bud which is to be left, cut about $\frac{1}{4}$ to $\frac{3}{8}$ of an inch above it making a diagonal cut with the lower edge of cut opposite the bud. (See illustrations on page 7).

Always make a smooth cut. Poor pruners, dull blades or careless cutting which leaves a ragged edge, mean slow healing and opportunity for disease to attack the plant through the wound.

Always cut close up to and parallel with the main stem, branch or trunk in

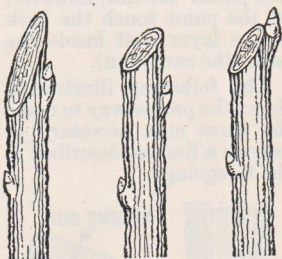
removing a branch from a tree, or a side shoot from a shrub or plant. Leaving a stub, even a short one, delays healing and provides opportunity for disease to enter. In making such cuts, have the *blade* of the shears next to the portion to be left.

The following illustrations show a "right" for summer or green pruning, and a "right" for winter or dormant pruning as regards the distance of the cut from bud:



Left—correct for summer pruning, slightly closer to bud than in winter pruning;
Right—correct for winter pruning.

The following illustrations show three "wrongs" commonly found in careless pruning:

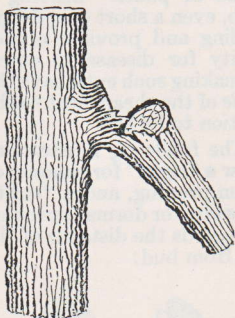


Left—wrong, too slanting;
Center—wrong, too far above bud;
Right—wrong, too close to bud.

When it is necessary to remove a branch or limb from a tree, make certain to do it properly.

The illustration at top of next page shows the wrong way as the branch breaks before sawing is finished, stripping the bark and leaving

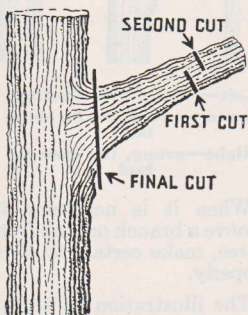
a wound which may never heal properly.



Never attempt to remove a large branch with a single cut.

In removing such a branch, first make a half cut with saw six to ten inches from main branch or trunk *on the under side*; then a quarter or a half inch above this make a cut on the upper side, sawing through till the branch breaks off; then with third cut, remove stub cutting close up to and parallel with main branch or trunk. Should the wound be more than a couple inches in diameter, it is well to paint the exposed wood with white lead and linseed oil paint, or tree paint. Do not, however, let the paint touch the bark or the layer next inside the bark (the cambium).

The following illustration shows the proper way to make the three cuts necessary to remove a limb as described in the foregoing:



First, cut on underside; then on upper side above first cut; then remove stub cutting close up to and parallel with main stem or trunk.

Roses—

How to prune and train for quality

FOR general instructions on pruning roses, one could hardly do better than to paraphrase an axiom and say: "Spare the pruner and spoil the plant".

There are a few varieties of roses which will get along fairly well with little pruning. In the main, however, the gardener who does not spare his shears is particularly well rewarded.

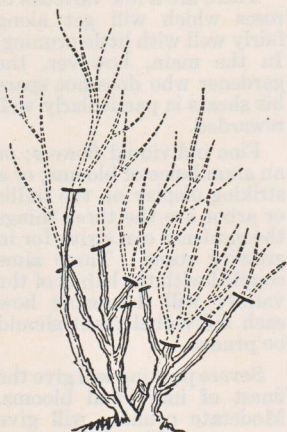
Fine individual flowers; or an abundance of blooms; or a striking display on the trellis or arbor are the three things the gardener can strive for in growing roses. These aims coupled with the habits of the variety will determine how each individual plant should be pruned.

Severe pruning will give the finest of individual blooms. Moderate pruning will give many more blooms but they will not be nearly as perfect, will not be as large, nor will they have such long stems. Light pruning will give an abundance of blooms, larger plants, a longer period of blooming and a more attractive display on the lawn; the flowers, however, will be smaller and with shorter stems. Should the gardener have a large number of roses, he probably will prune for each result.

The gardener should know his varieties. This is important. Should he not know them, he should inform himself either by consulting some one who knows or by carefully studying a good nurseryman's catalog which generally classifies and describes the varieties at least as to type, such as: "Hybrid Perpetuals", "Hybrid Teas", Teas, etc.

Some varieties of the same type or class often are stronger and more vigorous than others. In such cases, **prune the weaker more severely than the stronger ones.**

As a general rule, cut from $\frac{1}{4}$ to $\frac{3}{8}$ inch above an outside bud or eye. The following illustration shows how the canes of a Dwarf Rose should be cut to carry out the old rule: "The weaker the growth, the harder (more severe) the pruning". Also note that the canes are *never* cut to the same length.



Pruning a Dwarf Rose

The dotted lines show the growth to be cut away

After the gardener has identified his roses fully as to type and class, the following individual instructions, if followed carefully, should prove satisfactory:

Climbers or Ramblers: In spring, cut out dead and winter - killed wood. In summer after flowering, cut back to the ground canes that have bloomed for two or more years to get strong canes for next year's flowers. The greatest bloom is borne on one-year-old canes and these canes bloom better if they are trained in horizontal position.

Hybrid Perpetuals: In March or early April, cut out all weak growth and winter-killed wood. For finest flowers, prune severely, cutting strong canes back to three or four buds, leaving only four to six canes. For more blooms, prune moderately leaving six or seven buds to each cane. For a large display of blooms,

prune lightly cutting each cane back about one third its length. Stake and loosely tie the longest canes.

Hybrid Tea Roses: Prune in spring as soon as growth starts. Remove all weak growth and thin out wood. Often these Teas send up suckers which, if permitted to grow, will weaken the more desirable top. They should be kept cut back all through the growing season. Other than this, these roses can be treated as recommended for the Hybrid Perpetuals.

Hybrid Sweet Briars: In spring, remove old wood and surplus canes. Trim lightly to keep to shape desired. Wood which has flowered year after year should be cut out from base of plant to give younger canes a chance.

Rugosa: In spring, cut out old growth and whatever new growth is necessary to keep plant from crowding. Trim back to keep whatever shape has been determined upon. Ordinarily, only a little pruning is necessary.

Tea Roses: Prune in April. Cut out all old or weak wood. Cut stronger canes back to a healthy, vigorous bud.

The foregoing covers the annual spring pruning. In addition to this, each blooming variety should be pruned lightly after blooming unless most of the flowers are cut with long stems.

In the fall, the long canes should be cut back a third to half their length to protect them from being whipped and broken in the winter winds.

In planting roses, cut back Hybrid Perpetuals to three or four buds on each branch. Hybrid Teas, six to eight buds. Pot grown roses need little pruning when set out as they usually are made ready for planting by the nurseryman.

Flowers—

How to prune to get larger flowers and longer blooming

AS a rule annuals and perennials are generally left to 'shift for themselves' as far as pruning is concerned. The gardener, however, who follows a definite plan for dis-budding and pruning, is repaid with larger flowers, more flowers and, often, a second period of bloom.

Dahlias, chrysanthemums and sometimes asters are given such attention; but there are many others such as pinks, snap dragons, begonias, heliotrope, zinnias, etc. which can be pruned in this manner with most pleasing results.

If larger flowers are wanted, keep only a few branches, or stalks, to each plant, rubbing off or pruning all buds except the terminals or the strongest bud clusters. This pruning should be done shortly after growth starts, or before the buds to be removed have made much development.

Asters, cosmos, petunias, marigold, heliotrope, snap dragons, etc. can be induced to branch freely and bear many more flowers than they would otherwise, if the main stem of the young plant is cut off before the first top buds develop.

Cutting flowers as fast as they reach full bloom, or as soon as they begin to fade, will lengthen the blooming period materially. This is true of pansies, sweet peas, violets, nasturtiums, etc. It is a good plan each day, or every other day to spend a few moments snipping off fading blooms to get this result.

Often after the first flowers have bloomed, another crop can be secured by cutting out one-half or two thirds of the top of each plant. This forces new shoots to start from the stubs which usually grow rapidly and flower freely a few weeks later.

Shrubs—

How to prune for bloom and appearance

THE care of shrubs is an important factor in the appearance of any home garden. No matter how well the lawn and flower beds may be cared for, ornamentals of this type, if left to themselves, soon take on a neglected appearance. Consequently, intelligent and timely pruning is more than worth the time and effort it takes.

Shrubs of this character can be divided into two classes, namely: Those which bloom in spring or early summer from buds on the wood of the previous year's growth; and those which flower in late summer or early fall from buds on the present year's growth of wood. The former should be pruned in the summer, just after the plants have finished flowering; the other class must be pruned while dormant in the winter months or early spring before the sap starts to rise.

The same general rules as to quality and quantity of bloom applies to some extent to the pruning of these shrubs. Those lightly pruned will produce the greatest show of flowers while those more sharply pruned will produce fewer flowers but of better quality.

However, as such shrubs usually are planted for their natural beauty and mass effect rather than just flowers, it is advisable to prune more with a view to vigor, health and beauty rather than flower development.

The Forsythia (Golden Bell) for instance, will produce more bloom and have a better appearance if permitted to retain its natural form. After flowering its branches should be thinned out and all dead growth removed. Also some of the branches two or three years old may be cut away in order to aid in the growth of new wood. Aim, however, to keep the natural shape as nearly as conditions will permit.

PRUNE IN SUMMER

After Flowering

The following list gives a few of the shrubs in this class which should be pruned in the summer after flowering:

Azalea (Hardy Ghent, Mollis)
Calycanthus Floridus (Sweet Shrub)
Celastrus (Bitter Sweet)
Cercis (Judas Tree)
Chionanthus (White Fringe)
Cornus (Dogwood)
Crataegus oxyacantha (English Hawthorne)
Exochorda (Pearl Bush)
Forsythia (Golden Bell)
Lonicera fragrantissima (Bush Honeysuckle)
Prunus (Flowering Almond)
Roses (Climbing Varieties)
Spirea Prunifolia (Bridal Wreath)
Spirea Thunbergii
Spirea Van Houttei
Syringa (Lilac)
Viburnum (Snowball)
Viburnum Opulus (High-bush Cranberry)
Weigalia (Diervillas)

PRUNE IN WINTER

While Dormant

A few of the shrubs in the class which should be pruned in the winter while dormant, are as follows:

Althea, Shrubby (Rose of Sharon)
Buddleia (Butterfly Shrub)
Hibiscus Syriacus (Rose of Sharon)
Hydrangea paniculata (Common Hardy Hydrangea)
Lilac Japonica (Tree Lilac)
Roses (Garden Bush Varities)
Spirea Bumalda (Anthony Waterer)
Spirea Douglasii
Vitex Incisa

The following shrubs require very little pruning. The occasional removal of broken or old wood being all that is necessary:

Barberis Thunbergii (Japanese Barberry); Barberis Vulgaris (Common Barberry); Deutzia; Kalmia Latifolia (Laurel); Laburnum (Golden Chain); Magnolia; Mahonia; Philadelphus (Mock Orange); Rhododendron.

These shrubs are used either as individual specimens or in a mixed shrubbery border. If the former, they will need more pruning to keep them to the desired shape; if part of a shrubbery border, it is best to prune but little so that the plants may keep their natural form as much as possible.

Hedges—

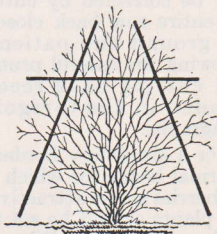
How to plant, prune and shear

BECAUSE of the many poor specimens one sees, the growing of a good hedge may seem a difficult matter. This is not the case, however, if one remembers a few principles of plant growth which must be considered if a dense, well-shaped hedge is desired.

For a close, dense, formal hedge of common or California Privet, the plants should be set very close together. It is well to set the plants in a trench and pack soil firmly around the roots to within about two inches of the top of the trench. This will make watering easy and after a time, the trench will fill with soil.

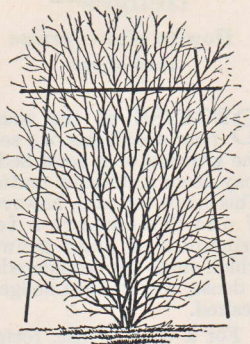
After setting, every plant should be pruned to the same height, 3 or 4 inches. They then should be permitted to grow an entire season without further attention.

The following spring, the hedge should be cut back to a uniform height of about four to six inches.



**After a season's growth,
hedge should be cut back to
4 to 6 inches high.**

Then when most of the plants have reached a height of ten inches, the hedge should be trimmed back to about eight inches and the side branches pruned to give a uniform width throughout the length of the hedgerow. The top of the hedge should not be permitted to become greater in width than the bottom or the lower branches will become weak.



When ten inches high cut back to eight inches and trim sides to a uniform width. The top should not be permitted to become wider than the bottom.

Subsequent prunings should not permit the hedge to increase more than two or three inches in height and width until the desired size is reached; after which the hedge should be sheared sufficiently often to keep it in good form. This gradual growth will insure a dense hedge from the ground up.

Hedges started wrong and allowed to develop with little or no growth near the ground—the top-heavy hedge—can only be corrected by cutting the entire row back close to the ground and patiently following the careful pruning and cutting back recommended in the foregoing paragraphs.

For a shrubbery border or informal hedge for which the Barberries are so attractive—the plants should be set two or three feet apart. When set they should be cut back to about $\frac{1}{3}$ to $\frac{1}{2}$ their height. The following spring the top should be cut back to help growth of the lower branches. After this it is best to let the plants assume their natural form only pruning to remove dead or broken branches.

Vines, Evergreens and Shade Trees—

How to prune and manage for beauty

IN the main, the pruning of ornamental vines will depend upon the purpose for which they were planted. If used only for shade or to screen some view, the only pruning required will be the removal of dead portions, heading in those branches growing beyond desired limits, and whatever is needed to train them to the trellis or support.

Vines planted for their bloom should receive more careful attention. Should the vines bloom on wood grown the previous year, they should be pruned immediately after flowering. Vines in this class are:

Akebia
Bignonia (Trumpet Vine)
Parthenocissus (5 - leaf Ivy,
Virginia Creeper, or Woodbine)
Wisteria (Chinese, or Japanese
Wisteria)
Wisteria (Native)

Should the vines bloom in the summer or early fall on wood grown during the current year, they should be pruned during winter or very early in the spring. Vines in this class are:

Clematis Jackmanii
Clematis Paniculata (Japanese
Clematis)
Lonicera Sempervirens (Coral
Honeysuckle)
Lycium (Chinese Matrimonial
Vine)

Evergreens

Many persons seem fearful of pruning an evergreen. Due to lack of proper attention one sees many misshapen specimens which would have been attractive had they been pruned properly at the right time.

In a number of specimens, where uniformity of size is desired, the branches growing most vigorously may be checked by pinching off the points of each.

Generally, this principle may be applied to advantage in pinching off the leaders of

overly vigorous side branches and thus diverting the energy to weaker branches. The growth of the stronger branch is not injured as a new leader will take the place of the one pinched out.

Should a spruce or fir lose its leader, a new one often may be obtained by bending the topmost lateral upward and loosely tying it to the stub of the original leader. After a season or so it will take the leader's place, when the tie may be cut.

Shade Trees

In planting shade trees, they should be cared for much the same as fruit trees (see pages 19-24). The roots should be pruned at planting time and the young tree cut back with a view of forming a good framework for the future tree. Before starting to prune, however, it is well to study the natural habit of mature specimens in order to co-operate with Nature in securing strong, well-shaped, shade trees.



Fruit Trees—

How to plant and prune

FRUIT tree pruning may be divided into three types as regards the results to be achieved, as follows:

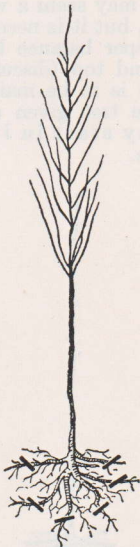
To shape the young and growing tree;

To reform trees neglected in former years; and

To keep trees in vigor, health and good bearing.

To shape the young and growing tree: Apple, peach, plum, pear, cherry and quince trees should be carefully pruned at the time of planting. First, the extra long roots should be cut back to about the average length of others of similar size and all bruised and broken ends should be cut off just above the injuries. All other roots the size of a pencil should be shortened somewhat.

These cuts should be made outward from within so that the cut surface rests on the



Young peach tree as received from nursery. Roots should be trimmed as indicated by cut lines.

soil when the tree is set. When planted the roots should be straightened out into normal

position as nearly as possible. Some nurseries supply fruit trees with roots pruned and tops cut back as they should be, all ready for planting. In planting such trees follow directions supplied by the nurseryman.

After the tree is set there are two methods of pruning which should be followed, depending upon the age or size of the tree, when received from the nursery. Some use a sharp knife for this cutting, but we recommend a good pruning shear. In making these cuts, it is advisable to cut upward as a downward cut is more likely to leave a rough, ragged edge, particularly when a knife is used.

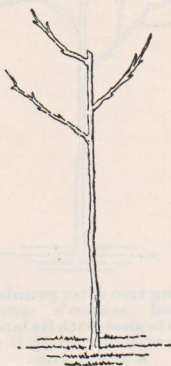
Trees one year old and other small, slender trees: The main stem should be cut back $\frac{1}{4}$ to $\frac{1}{3}$ its length with a view to leaving several strong buds immediately below the cut. All the side branches should be cut off to stubs with at least one bud each.

This may seem a waste of growth, but it is necessary if the proper balance between roots and top (discussed on page 4) is to be maintained and the tree given a good, healthy start in its new location.



One year old peach tree headed back and spurred at time of planting. Head similar to that shown in illustration on opposite page will be formed a year later.

Trees two or more years old, at time of planting, or strong, well-grown stocks with a more or less branching top, should have the roots trimmed and after being set, should be pruned to form the "head". Three to five of the best branches are selected and these headed back to a few buds each. All other branches should be cut off close to the main stem. The stem, also, should be cut back to just above the uppermost of the selected branches. The branches left will determine the ultimate shape and form of the tree; so care must be exercised in leaving branches that will develop into the shape desired. These branches should be distributed as evenly as possible along the stem and around it. Do not leave two branches directly opposite each other as this may result in a bad crotch.



Pruning to form "head"

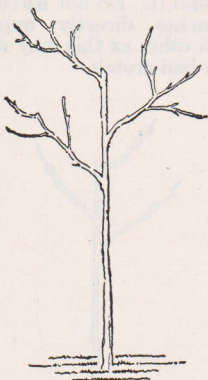
Leave 3 to 5 branches evenly distributed along the stem and around it. Cut back main stem.

This great sacrifice of wood may seem prodigal but it is essential to the vigor, strength and future productivity of the tree.

Should it be desired that the tree have a "low" head, the branches left should not be more than two feet from the ground for apples, cherries or pears; or more than eighteen inches for peaches and plums.

Grown on a lawn or in a garden, fruit trees with 'low' heads are not usually desirable. Consequently, with such trees, the branches selected should be from two to three feet from the ground when pruned to form the head.

Early in the spring after trees headed in have had a season's growth, they should be pruned back about one-half of the previous season's growth. All side shoots on branches that will help the mature structure of the tree should be cut back to three or four buds. All other side shoots should be removed clean. Avoid leaving laterals that will form crotches or those that will interfere with other branches as growth progresses.



Young tree after pruning of second season's growth. Each branch with its laterals is treated as though it were a young tree.

If the pruning for the first two or three seasons is done thoroughly as outlined in the foregoing, little pruning will be required in succeeding years except as outlined under the respective paragraphs: *Apple*, *Peach*, etc.

Pruning to reform trees neglected in former years: With such trees, it is often necessary to cut away the entire top of the tree. Often the grower makes the mistake of trying to do this all at one time. The proper method is first to cut away all the new young growth and sprouts,

except a comparatively few selected to make the new limbs or frame work. Then about a third of the old limbs should be removed just beyond the point from which the new leaders start. This work should be done with care.

During the next two years the balance of the old limbs may be removed the same way and the new limbs treated the same as the limbs of a young tree are handled.

Pruning to keep trees in health and good bearing: After trees are properly formed and well established, to keep them in vigorous growth and good bearing, merely requires the application of the general pruning principles. The different fruits vary somewhat in the amount and kind of pruning, but the following brief suggestions, if followed, should give the results desired:

APPLE

Most varieties are of vigorous growth and will need some pruning each year. Remove superfluous wood from the middle and top which will make the tree too tall, or too thick and bushy. Care should be taken not to cut off close the side limbs on main branches as this will sacrifice fruiting wood. Remove suckers whenever they get a start.

PEACH

Aim to keep peach trees low and open headed—keep interior growth thinned out. Winter-killed and other weak wood should be cut out in early spring. Extra strong growths can be headed back during summer. Keep suckers and shoots from main trunk cut off.

PEAR

Most varieties tend to grow in an upright compact form and should be lightly thinned out each spring. Cut whenever possible above an outside bud to throw growth outward. New growths from main trunk and lower limbs should be cut back close.

CHERRY

Once a cherry tree is well advanced and in good form, very little pruning is necessary—only that needed to keep it in good health. Fruit bearing is little affected either way by pruning.

PLUM

Little pruning is needed. If desirable, plums may be set closer together than other fruits and the trees kept within limits by heading back each year. If this is done, a third to a half of the season's growth may be removed each year. This will not materially affect the amount of fruit produced. Plums are notorious for always setting more fruit than the tree can ripen.

QUINCE

On good soil, a quince grows vigorously, so the older wood should be thinned out each year. Never cut back all the new growth at one season as this will lessen the amount of fruit.



Small Fruits—

How to prune for best results

GRAPES

PRUNING and training are terms often confused in reference to grape culture. Pruning refers to the removal of such branches and other parts as shall insure a better crop. Training deals entirely with the disposition or management of the different parts of the vine while growing.

The different methods of training require different styles of pruning, yet the intelligent pruning of grapes rests upon a careful observance of these two peculiarities of the growing vine:

1st,—It must be remembered that the fruit is borne in a few clusters near the base of shoots grown the current year from wood of the previous year; and

2nd,—That the grape attempts to produce many more clusters than it can possibly mature.

A growing leafy branch is called a *shoot*; a ripened shoot is called a *cane*; a division of the trunk two or more years old is called an *arm*. An entire shoot grows in a month from a bud. As it grows, flower-clusters which are to form the grapes appear. The shoot continues growing and attains a length of ten to twenty feet; but flower-clusters only appear near the base of the shoot. At the close of the season, this ripened cane has produced a bud every foot or so from which new fruiting wood will spring next year. If all these buds were allowed to remain the vine would be overtaxed and the crop would be a failure. Pruning grapes, therefore, is essentially a thinning out process.

There are two distinct systems of pruning to secure the bearing top for the succeeding year regardless of the system of training

employed. These are: from *spurs* and from *renewals*.

Spurring is most commonly practiced in the horizontal-arm method of training. The two original arms are allowed to become permanent. In the winter, after having borne fruit, the canes from these arms are all cut away excepting from two to six; and these are cut back to stubs of two or three buds. The number of stubs and the number of buds left depends upon the variety.

The following winter, all canes growing from the stubs left the previous winter are cut away excepting one cane to each stub and these canes are cut back to two or three buds each. This procedure is practiced year after year. The part remaining each year from the previous top is called a *spur*.

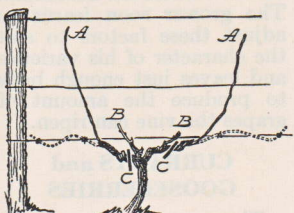
This method, called spur pruning, has the disadvantage of developing the producing wood further away from the main trunk each year. Moreover, the spurs become hard and lifeless after a time making it difficult to replace them with healthy wood. For these reasons, spur pruning has grown in disfavor with commercial growers.

Renewals may be made in two ways: from the ground and from buds near the head of the vine. Renewals from the ground now are used very little because they seldom give sufficient crop unless headed in for a year before being allowed to bear.

To get renewals from buds near the head of the vine requires that two or more canes of five to ten buds each be allowed to remain after each annual pruning; also that a similar number of canes be cut to stubs of one or two buds.

The two canes (A-A) will produce the shoots that will bear the next season's fruit; the stubs (B-B) will grow the renewal canes from which the second year's top will be produced. For these stubs the grower should select canes

inside the canes (A-A), or as near the main trunk or head as possible.



An established vine after being pruned in winter for renewals. A-A, two canes saved; B-B, two stubs saved. Dotted lines and cut marks explained in following text.

Early the next spring the canes (A-A) should be tied down to the lower wire as indicated by the dotted lines in the illustration. As the shoots grow from these canes, they should be tied to the upper wires. The canes which start from the stubs should be watched and the weaker ones rubbed off saving one strong shoot to each stub.

During the winter following, the canes (A-A) must be cut off close, as near the main trunk as possible (see cut lines C-C in illustration). At the same time the balance of the vine is again pruned to two or more canes of 5 to 10 buds each and a similar number of stubs of one or two buds each. This procedure is repeated year after year.

The renewals secured in this manner are really spurs as they contain two ages of wood. However, as the spurs are entirely cut away every two or three years at most, much of the disadvantages accompanying spur growth are avoided. At the same time, it often is possible to bring out the new canes from stubs arising on new wood at the head or from the main trunk. Wherever possible this should be done.

The length to which the canes (A-A) are cut varies with different varieties. Strong growers such as Concord and Niagara can carry ten to twelve buds on each

cane. With Delaware and similar varieties, twenty to twenty-five buds to the entire vine should be the maximum. The grower soon learns to adjust these factors to suit the character of his varieties and leaves just enough buds to produce the amount of grapes the vine can ripen.

CURRENTS and GOOSEBERRIES

The canes of currants and gooseberries bear several times, but the first two or three crops are the best. It is desirable, therefore, to cut out some of the oldest canes each year to encourage the growth of new wood. Vigorous growing canes should be headed back also.

The gooseberry makes a great deal more wood than is desirable. Hence, severe pruning is necessary. A new bush should first be brought to good shape by leaving a few of the strongest shoots regularly distributed to make an open head. As the bush gets older new shoots are allowed to take the place of older wood by cutting the old canes to the ground. The side shoots from older branches should be headed back or cut off all together to maintain a fairly open head. The best time for this pruning is autumn or winter.

BLACKBERRIES, RASPBERRIES and DEWBERRIES

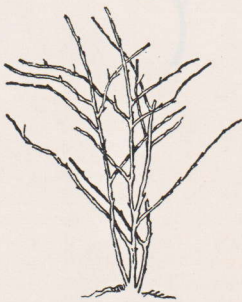
These fruits bear on canes that grew the preceding year. Having borne, the canes become barren. Pruning these fruits, therefore, becomes a question of removing old canes, after they have fruited; cutting out superfluous new growth whenever the plant attempts to grow more than five or six new canes; heading back the canes when they reach the desired height causing them to throw out laterals; and heading back the laterals.

The old canes should be cut out as soon as convenient after

the fruit has ripened. The new canes should be selected and all others cut away in the spring shortly after growth starts. New canes should be headed back and the laterals headed back also, whenever growth becomes sufficiently advanced to permit.

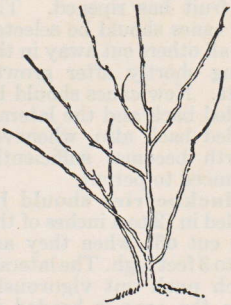
Blackberries should be headed in (2 to 4 inches of the tops cut off) when they are 2½ to 3 feet high. The laterals which push out vigorously when the cane is headed in can be allowed to grow full length, to be shortened early the following spring. There is no rule respecting the length of these laterals; usually they are left from 12 to 20 inches long. Some growers delay pruning laterals until the blossoms appear so as to know how much to cut off and still leave the bearing wood. Blackberries often are supported by wires or trellis, but if handled as outlined, they can be made self-supporting.

Black raspberries are usually headed in when 1½ to 2 feet high. This operation should be performed as soon as possible to force the laterals to start low making the bush short and self-supporting. The following spring the laterals should be cut back to 12 to 18 inches.



Well pruned Black raspberry plant.

Red raspberries are seldom headed in during the growing season; otherwise they are treated like black raspberries. The illustrations on this and the following page show two well pruned raspberry plants.



Well pruned Red raspberry plant.

Dewberries are usually tied to stakes, though they may be trained to a trellis or tied to a wire screen. After fruiting the old canes should be cut out and the young growths tied in their place and thinned to prevent crowding.



DISSTON

Pruners • Pruning Saws and Shears

DISSTON Professional Pruners

DISSTON Professional Pruners are unquestionably the finest examples of pruner perfection ever offered. These pruners are designed especially for the expert gardener, horticulturist, commercial fruit grower and others who will appreciate the character of material and workmanship embodied therein.



No. 156. 8½ inch. Drop forged, high carbon steel. Double riveted, detachable blade of alloy steel; hardened, tempered, finely ground and polished. Disston patented tension adjustment. Drop forged, snap-action, end latch. Knurled handles, highly polished. Blued volute spring.



No. 157. 8½ inch. Drop forged, high carbon steel. Double riveted, detachable blade of alloy steel; hardened, tempered, finely ground and polished. Disston patented tension adjustment. Drop forged, snap-action, end latch. Knurled handles, highly polished. Flat, double leaf, interlocked, brass spring.

DISSTON Home Garden Pruners



No. 126. 8⅛ inch. Alligator, draw-cut pattern. Solid drop forged, high carbon steel, hardened and tempered. Knife and bed jaws especially heat treated and tempered. Thread and lock-nut tension adjustment. Specially designed spring clip. Handles knurled, gun-metal finish. Blued volute spring.



No. 127. 8 $\frac{1}{8}$ inch. Blade-on-anvil type, full drop-forged. Cutter blade cuts against brass anvil. Disston patented tension adjustment. Spring clip. Handles knurled, gun-metal finish. Blued volute spring.



No. 107. 8 $\frac{3}{8}$ inch. Reiser pattern. Malleable iron with case hardened hook. Extra thin, high carbon tool steel, detachable blade; hardened, tempered, ground and polished. Thread and lock-nut tension adjustment. Reiser type "U" clip. Full polish finish. Double leaf spring of clock spring brass.



No. 136. 9 inch. Drop forged tool steel with detachable high carbon tool steel blade; hardened, tempered, ground and polished. Thread and lock-nut tension adjustment. Spring wire, end clip. Handles gun-metal finish. Blued volute spring.



No. 146. 9 inch. Solid drop forged tool steel, two-piece pruner. Blade hardened, tempered, ground and polished. Hook ground and polished. Thread and lock-nut tension adjustment. Spring wire, end clip. Handles black lacquer finish. Blued volute spring.

KEYSTONE Home Garden Pruners



No. 116. 9 inch. Malleable iron with detachable blade of high carbon steel, hardened and tempered. Hook and blade ground and polished. Thread and lock-nut tension adjustment. Lock spring catch. Handles black lacquer finish. Blued volute spring.

Quaker City Pruners

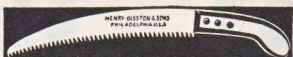


The No. 105 Quaker City Pruner is 9 inches long; made of malleable iron with detachable tempered blade. Snap-end closing latch. Handles blue lacquer finish. Blued volute spring.

DISSTON Pruning Saws



No. 166. Disston steel blade, taper ground, $1\frac{1}{2}$ inches wide at handle; 8 points, reversed teeth. Hardwood handle, lacquered orange. 12 and 14-inch blades.



No. 168. Disston steel blade, taper ground, $1\frac{1}{2}$ inches wide at handle; 8 points, long needle teeth. Hardwood handle, lacquered orange. 12 and 14-inch blades.



No. 38. Disston steel blade, taper ground, long needle teeth, 8 points. Hardwood handle, lacquered orange. 10, 12 and 14-inch blades.



No. 7. Blade of Disston steel, taper ground, cross-cut teeth, 8 points. Hardwood handle, weatherproof finish. 16, 18 and 20-inch blades.



No. 4. Blade of Disston steel; one edge cross-cut, 8 points; other edge has "Lightning" teeth. Hardwood handle, weatherproof finish. 16, 18 and 20-inch blades.



No. 31. Disston steel blade, skew-back, 7 points; 5 inches wide at butt, 1 inch at point. Hardwood handle, rounded edges, weatherproof finish. 20-inch blade.



No. 32. Same as No. 31 except has coarse teeth of the "Champion" pattern for heavier cutting. 20 and 24-inch blades.



No. D-27. Blade of Disston steel; 6 inches wide at butt, 1¼ inches at point. Hardwood handle weatherproof. Special beveled teeth, 6 points; cuts on both draw and push strokes. 26-inch blade.



No. 55



No. 111

No. 55. Pruning saw and shear. Curved blade of Disston steel, taper ground, 9½-inch cutting edge; long needle teeth, 8 points. Shear blade 4 inches long, 1½-inch cutting edge. Shear frame and socket malleable iron, colored orange.

No. 111. Pole pruning saw. Blade curved, taper ground, 9½-inch cutting edge. Long needle teeth, 8 points. Socket of malleable iron, colored orange.



No. 15. Blade of Disston steel, blued; ½ inch wide; 14 inches center to center of holes; 8 points. One-piece cadmium plated frame with round swivel stretchers. Hardwood handle, weatherproof finish.



No. 16. Blade of Disston steel, blued, ½ inch wide, 14 inches center to center of holes, 8 points. One-piece frame with swivel stretchers. Cadmium plated. Hardwood handle, weatherproof finish.

DISSTON Pruning Saw File

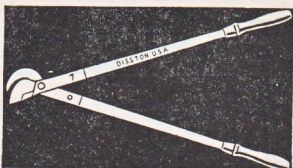


No. 38. Special File, six inches long, recommended for filing Nos. 38, 111 and 168 Pruning Saws.

DISSTON Lopping Shears

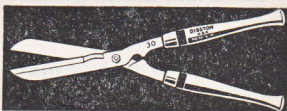


No. 5. Arms, blade and hook full hand forged from Disston steel. Blade and hook hardened, tempered and ground. Hardwood handles, lacquered orange. Length of arms 15 inches, overall length 18 inches.

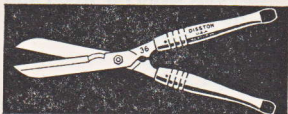


No. 7. Blade and hook made of Disston steel, hardened, tempered and accurately ground. Wood handles, lacquered orange. Length of arms 24 inches, overall length 28½ inches.

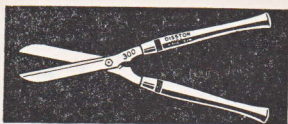
DISSTON Hedge Shears



No. 30. Blades of Disston steel, hardened and tempered. 1⅜" wide, half oval, hollow grd. Full polished. Natural hardwood handles, clear lacquer; black lacquer band at ferrule end. 8, 9 and 10-inch blades.



No. 36. Blades of Disston steel, hardened and tempered concave ground, polished. Round handles, natural wood, clear lacquer finish, tipped with black lacquer. 7, 8, 9, 10 and 12 inch blades.



No. 300. Same as No. 30 except smaller in size, blade not notched, rivet through ferrules, tangs and handles instead of riveted on ends. 6-inch blade.

DISSTON Grass Shears



No. 1105. Made from one piece Disston steel, with trowel shank; full polished, hardened and tempered. Ground and set to cut evenly. 7-inch blades.

DISSTON Garden Trowel



No. 47. Blade, post and tang forged from one-piece Disston steel; concaved the length of blade and tapered to a sharp point; hardened and tempered. 6-inch blade.

Other Disston Pruning saws and tools

Pole Pruners in different lengths

Pruning Hooks for pole use

Walnut pruning saws

Offset handle grass shears

Lawn and Border Shears

Dibbles

Post Hole Diggers

Disston also makes many different types of saws and tools:

Back Saws

Band saws for wood and metal

Buck saws

Butcher saws and blades

Circular saws for wood and metal

Compass saws

Coping saws

Cross-Cut saws—one and two man

Files of all kinds

Hack saw blades and frames

Hand saws for every need

Ice saws

Inserted tooth circular saws

Levels, gauges, try squares

Machine knives

Saw clamps and filing guides

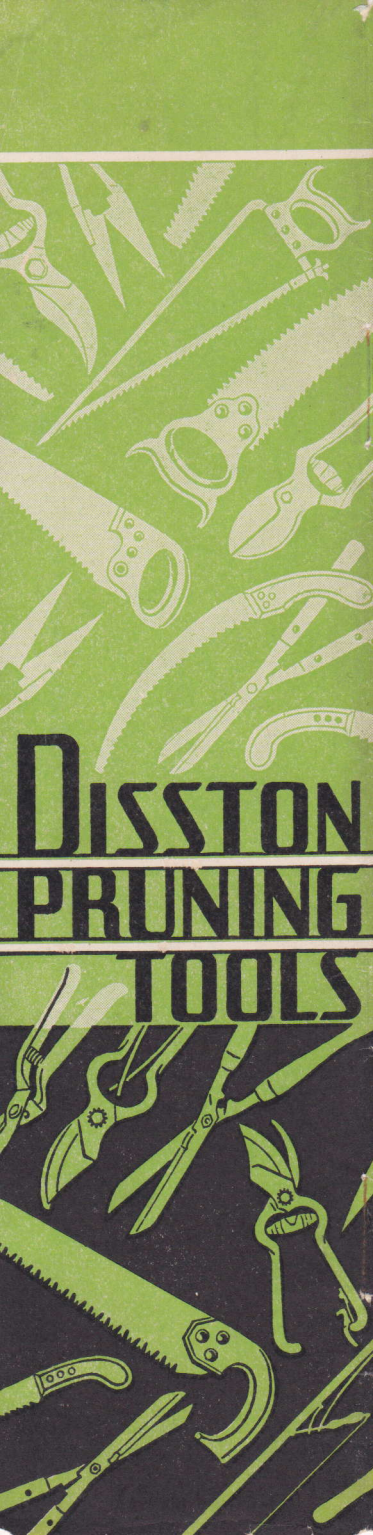
Tools for repairing saws

Trowels

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DISSTON PRUNING TOOLS